

which produced symptoms and signs suggestive of an acute abdominal condition are reported.

2. A summary of similar cases in the literature is furnished.

3. An explanation for massive hematoma in the rectus muscle, occurring in upper respiratory conditions, is presented by a study of autopsy findings of the influenza epidemic of 1917.

4. The practical surgeon is enjoined to consider rectus-muscle hematoma in cases of the acute abdomen following a respiratory infection.

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### FOOD POISONING APPARENTLY DUE TO HOLLANDAISE SAUCE

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THREE separate and unrelated outbreaks of food poisoning were reported to the San Francisco Department of Public Health. The illness was estimated to have affected several hundred persons. The third outbreak was reported in December, 1937. All the outbreaks occurred in a first-class hotel; and though suspicion was cast upon the "Hollandaise sauce" in each, none of the sauce was available for examination except in the last. In this outbreak twenty persons were affected.

The clinical evidence appeared conclusive for food poisoning—namely, symptoms of nausea, abdominal pain, vomiting, and diarrhea being present two to six hours after the meal. Likewise, the epidemiologic evidence appeared conclusive as to the "Hollandaise sauce" being the causative food factor. The resulting laboratory examination of the "Hollandaise sauce" was interesting. The pH electrometrically was 4.65 after being several days old, but in fresh material the pH was 6.31. Investigation further indicates a wide discrepancy among the chefs of San Francisco hotels as to the manufacture of the sauce, the main difference being the use of vinegar, which was indeed rare, if used at all. The sauce generally consists of egg yolk, melted butter, salt, cayenne pepper, with a small amount of lemon juice, and no vinegar, strained through cloths. This composition, with its pH, coupled with the fact that the sauce may be "incubated" or kept warmed on or in a steam table for twelve to eighteen hours, suggests that the presence of demonstrable hemolytic staphylococci and the production of gastro-intestinal irritant substances, may be due entirely to growth of the organisms. The causative sauce revealed numerous colonies of hemolytic staphylococci, which organisms, when grown in sauce made similarly, proved toxic when injected into laboratory animals. Examinations of stools and throat cultures of the food handlers involved in the manufacture of the causative sauce were negative for organisms of the paratyphoid-enteritis group or for hemolytic staphylococci.

On the basis of the epidemiologic and laboratory evidence it would appear that sauces manufactured as, and containing such materials as in the "Hollan-

daise" recorded, and stored or incubated for hours in kitchens, offer a suitable vehicle for the production of food poisoning in humans. From the laboratory evidence one might deduce that specific contamination may have been general, such as from ingredients, hands, apparatus, straining cloths, skin or the respiratory tract, and that multiplication of the bacteria was due to the excellence of the medium and of the incubation.

Curiosity as to the source of hemolytic staphylococci cannot be readily or reasonably met, since these organisms are not uncommon in the types found on the skin and in the respiratory tract of man. Since the advent of this group of bacteria into the realm of food poisoning in man, any laboratory evidence so obtained may have to be regarded as circumstantial, and closely allied with the epidemiology. Further, field investigations as to the incidence of hemolytic and other staphylococci in normal foods and their entero-toxicogenicity appear necessary. There is no doubt that the organisms are common and exceedingly difficult to eliminate. Therefore, the question naturally arises as to their appearance in foods not involved in outbreaks of food poisoning. Moreover, what conditions, artificial or experimental, must be linked to have poisonous products produced?

Conclusions. An outbreak of food poisoning, affecting twenty persons, is reported in a first-class hotel from so-called "Hollandaise sauce." The epidemiologic, bacteriologic, and toxicologic evidence appears conclusive as to the food and to the causative organism, hemolytic staphylococci. The specific source of the contamination was not determined. Executive orders, however, of the San Francisco Department of Health now prescribe exact directions for the manufacture, storage and use of such sauces in hotels and restaurants.

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### ALLERGY TO LIVER EXTRACT

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ALLERGY to liver extract, acquired as a result of injections, is reported only four times in the American literature and five times in foreign literature. In the American reports, Metzger<sup>1</sup> in 1931 described an asthmatic reaction following the administration of liver extract. Held and Goldbloom<sup>2</sup> described a reaction characterized by an urticaria. Crip<sup>3</sup> described a marked reaction consisting of severe asthma and a generalized urticaria, and Krantz<sup>4</sup> described a generalized urticaria following the parenteral administration of liver extract.

<sup>1</sup> Metzger, Edward: Bronchial Asthma Caused by Liver and Liver Extract Diet in a Patient Suffering from Primary Anemia, *J. A. M. A.*, 96:110 (Jan. 10), 1931.

<sup>2</sup> Held, I. W., and Goldbloom, A. A.: Addison-Biermer's Anemia (Pernicious Anemia); Report of a Case Showing Allergic-like Phenomena to Liver Extract, *J. A. M. A.*, 96:1361-1363 (April 25), 1931.

<sup>3</sup> Crip, Leo H.: Allergy to Liver, *J. A. M. A.*, 110:506 (Feb. 12), 1938.

<sup>4</sup> Krantz, Clement I.: Anaphylactic Reactions Following Medication with Parenteral Liver Extract, *J. A. M. A.*, 110:802 (March 12), 1938.

In the foreign literature Engel<sup>5</sup> in 1933 described an immediate reaction consisting of marked weakness, imperceptible pulse, vomiting and a skin rash. A short time later Grün<sup>6</sup> described reactions characterized by a generalized erythema, dyspnea, weakness and vomiting. Roovers<sup>7</sup> reported several instances in which asthma, urticaria and other unpleasant reactions developed. Lasch<sup>8</sup> described two cases of allergy to liver consisting chiefly of urticarial manifestations. Schlesinger<sup>9</sup> reported one of angioneurotic edema. The purpose of this report is to bring attention to the fact that reactions do occur after parenteral liver therapy.

## REPORT OF CASE

Mrs. W. H., a white female, age 65, complained of weakness, sore tongue, abdominal discomfort and sporadic attacks of diarrhea. Her past history was negative and she had never received any injections of horse serum.

The only essential abnormal physical findings were: smoothness of the edges of the tongue and a diminution of vibratory sense in the lower extremities. Examination of the blood revealed: Hemoglobin 60 per cent (Dare), erythrocytes 2,900,000 cells per cubic millimeter, leukocytes 5,000 cells per cubic centimeter, polymorphonuclear leukocytes 63 per cent, lymphocytes 30 per cent and monocytes 6 per cent. The erythrocytes were well filled with hemoglobin, but with moderate anisocytosis, macrocytes predominating and poikilocytosis. The leukocytes showed no changes from normal aside from being reduced in number. There was a definite achlorhydria.

From these observations a diagnosis of pernicious anemia was made and liver therapy by injection was instituted. Dilute hydrochloric acid during meals was also given. A good response resulted as the diarrhea, soreness of the tongue and abdominal discomfort subsided. The patient received liver extract (Lederle's) intramuscularly at intervals of seven days for three months without any reactions. Clinical improvement was marked and the patient was instructed to take liver medication orally. She returned to her ranch in Montana and was not seen again for a period of eight months. When she came back she complained of feeling tired in her thighs and legs, as well as of general weakness. Parenteral liver medication was again instituted, and after a short time her condition improved. About fifteen minutes after the fourteenth (total) injection a marked reaction developed consisting of anxiety, accelerated pulse rate, a generalized feeling of warmth which progressed into a moist perspiration and finally a generalized urticaria. Epinephrin was given immediately and relief resulted shortly. Intramuscular injections were discontinued and a liver concentrate by mouth was substituted. At present the patient's health has been restored to about normal.

The cause of these reactions is not entirely clear. Milbradt<sup>10</sup> found that the preservative used which contained the benzene ring was capable of producing these reactions. According to Coca, quoted by Crip, the specific antibodies produced in acquired allergy result from unusual exposure, such as by injection to an unusual substance, as worms, insulin, solution of posterior pituitary and liver. In direct

contrast to the specific antibodies found in natural allergy, such as bronchial asthma, hay fever, etc., the specific antibodies in acquired allergy are of short duration, and their presence is usually associated with the finding of other antibodies, such as precipitins and anaphylactic antibodies. Crip in his tests found the serum to show the presence of precipitins against liver extract up to ten months after the initial reaction, but failed to demonstrate the presence of anaphylactic bodies to liver in the serum during a similar period of time. He further found that this type of acquired allergy could not be produced experimentally.

## IN CONCLUSION

An allergic reaction apparently to liver extract was observed. This acquired sensitivity is to an organ and not to a biologic source. These reactions are rare, but it should not detract one from the use of liver extract. To the contrary, it should make one be on the lookout for evidence of this type of sensitivity.

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I should like particularly, at this point, to make it clear that the Public Health Service has no jurisdiction whatever over local health matters entirely within the states. You probably recall that the Constitution of the United States reserved to the states all powers not specifically delegated by the Constitution to the Federal Government.

Control over local health matters wholly within the states was not among the powers delegated to the Federal Government by the Constitution.

I also wish to emphasize the fact it is not the aim of the Public Health Service, in carrying out this or any other program, to establish a huge federal machine which will have control over all state and local health work in this country.

It is our purpose, on the other hand, to aid the state and local authorities in developing further their own organizations and programs.

The last thing we wish to do is to break down the local sense of proprietorship and the sense of responsibility, among the local people, for support, financial and otherwise, of their own institutions.—C. E. Waller, United States Public Health Service.

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In the more than thirty years since the first bureau of (governmental) research was established, American governments have come a long way on the road to respectable public service. Citizen agencies of various sorts have contributed to that progress, and the modern public official, in spite of handicaps, has played a creditable part. The basis of much of this reform has been facts, and "getting the facts" has been the contribution of research.—Lent D. Upson, *The Annals*.

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It is the opinion of those who best understand the physical system that if the physical laws were strictly observed from generation to generation there would be an end to the frightful diseases that cut life short, and of the long list of maladies that make life a torment or a trial, and that this wonderful machine, the body—this "goodly temple"—would gradually decay, and men would at last die as if gently falling asleep.—Mrs. Sedgwick.

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Health is certainly more valuable than money, because it is by health that money is procured; but thousands and millions are of small avail to alleviate the tortures of the gout, to repair the broken organs of sense, or resuscitate the powers of digestion. Poverty is, indeed, an evil from which we naturally fly; but let us not run from one enemy to another, nor take shelter in the arms of sickness.—Johnson.

<sup>5</sup> Engel, K.: Anaphylactic Reactions in Liver Preparations: Case of Pernicious Anemia, *Bol. Assoc. Med. de Puerto Rico*, 25:326-329 (May), 1933.

<sup>6</sup> Grün, G.: Allergic Reaction to Injection of Liver Preparation, *Orvosi Netil.*, 77:736-737 (Aug.), 1933.

<sup>7</sup> Roovers, J. J. C. P. A.: Treatment with Liver Extract (Pernaemon): Unpleasant Symptoms After Injections, *Nederl. tijdschr. v. geneesk.*, 79:5148-5149 (Nov. 2), 1935.

<sup>8</sup> Lasch, Fritz: *Wien med. Wchnschr.*, 86:126-127 (Feb. 1), 1936.

<sup>9</sup> Schlesinger, Wilhelm: A Case of Angioneurotic Edema from Oral Administration of Liver in Pernicious Anemia, *Wien. med. Wchnschr.*, 80:696 (May 17), 1930.

<sup>10</sup> Milbradt, W.: Ueber Eine eigenartige scheinbare Allergie gegen Leberextrakt, *Dermat. Wchnschr.*, 101:1595 (Dec. 21), 1935.